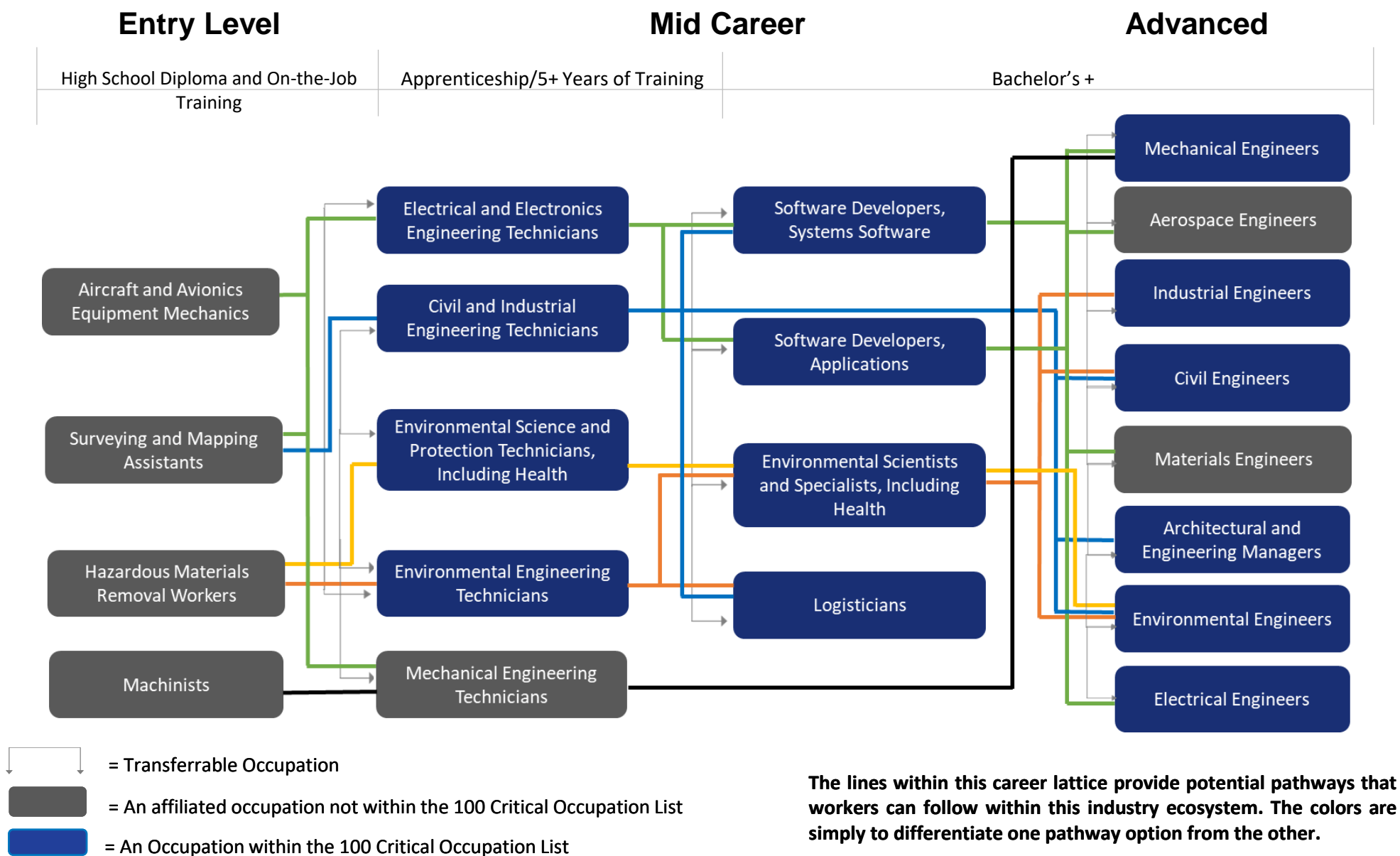


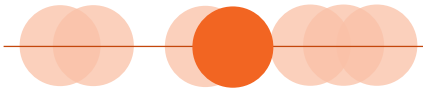
# Aerospace and Defense Ecosystem Career Lattice



# Electrical and Electronics Engineering Technicians Occupational Profile

## MEDIAN SALARY & WAGES

\$30.16/hour



## COMMON JOB TITLES

Electronics Technician  
Engineering Technician  
Electrical Technician  
Instrumentation Technician

## REQUESTED EDUCATION



## TOP SKILLS REQUESTED

Reading Comprehension  
Critical Thinking  
Complex Problem Solving  
Active Listening  
Speaking  
Monitoring  
Troubleshooting  
Writing  
Operation Monitoring

## TOTAL JOBS FOR 2028

1,549



## COMMON KNOWLEDGE COMPETENCIES

Engineering and Technology  
Computers and Electronics  
English Language  
Mathematics

## TOP CERTIFICATIONS REQUESTED

Commercial Drivers License (CDL)  
ASNT Non-Destructive Tester  
Petroleum Engineering Certification

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education



Creative  
Industries

# Civil Engineering Technicians Occupational Profile

## MEDIAN SALARY & WAGES

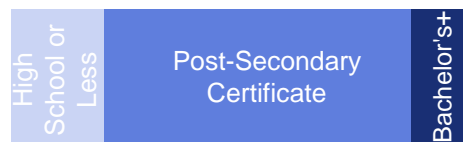
\$25.08/hour



## COMMON JOB TITLES

Engineering Technician  
CAD Technician  
Civil Engineer  
Construction Technician

## REQUESTED EDUCATION



## TOP SKILLS REQUESTED

Critical Thinking  
Reading Comprehension  
Active Listening  
Mathematics  
Speaking  
Writing  
Monitoring  
Complex Problem Solving  
Judgment and Decision Making  
Coordination

## TOTAL JOBS FOR 2028

762



## COMMON KNOWLEDGE COMPETENCIES

Engineering and Technology  
Mathematics  
Building and Construction  
Design

## TOP CERTIFICATIONS REQUESTED

Professional Engineer  
Licensed Professional Engineer  
ASNT Non-Destructive Tester

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education



Creative  
Industries



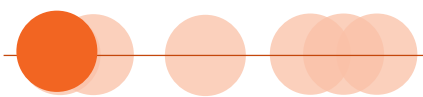
OKLAHOMA  
WORKS

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# Environmental Science and Protection Technicians, Including Health Occupational Profile

## MEDIAN SALARY & WAGES

\$14.41/hour



## COMMON JOB TITLES

Environmental Technician  
Field Technician  
Corrosion Technician  
Environmental Specialist

## REQUESTED EDUCATION



## TOP SKILLS REQUESTED

Active Listening  
Reading Comprehension  
Critical Thinking  
Speaking  
Writing  
Science  
Complex Problem Solving  
Monitoring  
Social Perceptiveness  
Judgment and Decision Making

## TOTAL JOBS FOR 2028

403



## COMMON KNOWLEDGE COMPETENCIES

English Language  
Biology  
Law and Government  
Mathematics

## TOP CERTIFICATIONS REQUESTED

Commercial Drivers License (CDL)  
Certified First Responder  
ASNT Non-Destructive Tester  
American Registry of Radiologic Technologists (ARRT) Certified

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education



Creative  
Industries



OKLAHOMA  
WORKS

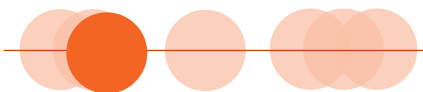
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# Environmental Engineering Technicians Occupational Profile

## MEDIAN SALARY & WAGES

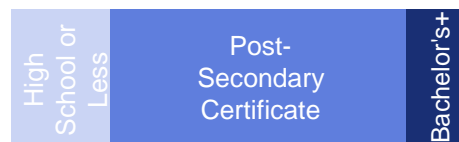
\$17.57/hour



## COMMON JOB TITLES

Engineering Technician  
Cleaning Technician  
HVAC Refrigeration Technician  
Wastewater Operator

## REQUESTED EDUCATION



## TOP SKILLS REQUESTED

Reading Comprehension  
Active Listening  
Critical Thinking  
Active Learning  
Speaking  
Science  
Monitoring  
Judgment and Decision Making  
Writing  
Complex Problem Solving

## TOTAL JOBS FOR 2028

372



## COMMON KNOWLEDGE COMPETENCIES

Engineering and Technology  
Mathematics  
Customer and Personal Service  
English Language

## TOP CERTIFICATIONS REQUESTED

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education



Creative  
Industries



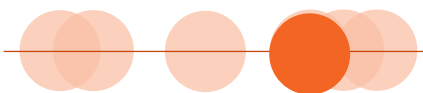
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WORKS

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# Software Developers, Systems Software Occupational Profile

## MEDIAN SALARY & WAGES

\$35.78/hour

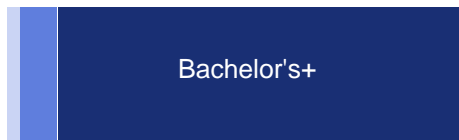


## COMMON JOB TITLES

Systems Engineer (Computer)  
Software Engineer  
Systems Integrator  
Systems Engineer (Architecture and Engineering)

## REQUESTED EDUCATION

Bachelor's+



## TOP SKILLS REQUESTED

Reading Comprehension  
Active Listening  
Critical Thinking  
Speaking  
Complex Problem Solving  
Mathematics  
Social Perceptiveness  
Judgment and Decision Making  
Writing  
Monitoring

## TOTAL JOBS FOR 2028

2,536



## COMMON KNOWLEDGE COMPETENCIES

Computers and Electronics  
Engineering and Technology  
Mathematics  
Telecommunications

## TOP CERTIFICATIONS REQUESTED

CompTIA Security+  
Microsoft Certified Systems Engineer  
VMWare Certified Professional (VCP)  
Certified Information Systems Security Professional

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education



Creative  
Industries



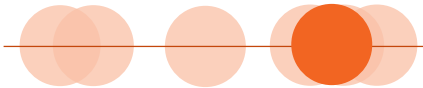
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WORKS

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# Software Developers, Applications Occupational Profile

## MEDIAN SALARY & WAGES

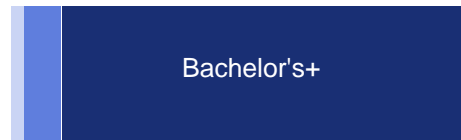
\$39.05/hour



## COMMON JOB TITLES

Software Developer, Applications  
Application Developer  
Application Integration Engineer  
IT Analyst

## REQUESTED EDUCATION



## TOP SKILLS REQUESTED

Programming  
Systems Analysis  
Systems Evaluation  
Judgment and Decision Making  
Critical Thinking  
Complex Problem Solving  
Operations Analysis  
Speaking  
Reading Comprehension  
Active Listening

## TOTAL JOBS FOR 2028

4,923



## COMMON KNOWLEDGE COMPETENCIES

Computers and Electronics  
Engineering and Technology  
Mathematics  
English Language

## TOP CERTIFICATIONS REQUESTED

CompTIA Security+  
Cisco Certified Network Professional  
Microsoft Certified Solutions  
Developer (MCSD)

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education



Creative  
Industries

# Environmental Scientists and Specialists, Including Health Occupational Profile

## MEDIAN SALARY & WAGES

\$27.08/hour



## COMMON JOB TITLES

Environmental Specialist  
Environmental Scientist  
Laboratory Technician  
Environmental Specialist

## REQUESTED EDUCATION

Bachelor's+

## TOP SKILLS REQUESTED

Reading Comprehension  
Active Listening  
Critical Thinking  
Writing  
Speaking  
Science  
Active Learning  
Complex Problem Solving  
Monitoring  
Coordination

## TOTAL JOBS FOR 2028

570



## COMMON KNOWLEDGE COMPETENCIES

English Language  
Mathematics  
Law and Government  
Clerical

## TOP CERTIFICATIONS REQUESTED

Cisco Certified Network Associate  
Licensed Clinical Social Worker  
Licensed Marriage and Family Therapist  
Licensed Professional Counselor

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education



Creative  
Industries



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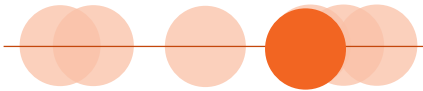
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# Logisticians Occupational Profile

## MEDIAN SALARY & WAGES

\$35.28/hour



## COMMON JOB TITLES

Logistics Manager  
Logistics Coordinator  
Supply Chain Planner  
Logistics Specialist

## REQUESTED EDUCATION

Post-  
Secondary  
Certificate

Bachelor's+

## TOP SKILLS REQUESTED

Critical Thinking  
Reading Comprehension  
Active Listening  
Speaking  
Monitoring  
Coordination  
Complex Problem Solving  
Social Perceptiveness  
Judgment and Decision Making  
Active Learning

## TOTAL JOBS FOR 2028

2,436



## COMMON KNOWLEDGE COMPETENCIES

Transportation  
English Language  
Administration and Management  
Customer and Personal Service

## TOP CERTIFICATIONS REQUESTED

Certified First Responder  
Certified Instrumentation Specialist  
Certified Coding Specialist

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education



Creative  
Industries



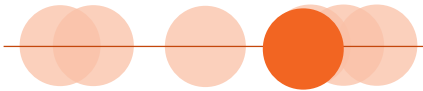
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# Mechanical Engineers Occupational Profile

## MEDIAN SALARY & WAGES

\$37.39/hour



## COMMON JOB TITLES

Mechanical Engineer

Design Engineer

Service Engineer

Project Engineer

## REQUESTED EDUCATION

Bachelor's+



## TOP SKILLS REQUESTED

Reading Comprehension

Active Listening

Mathematics

Science

Critical Thinking

Complex Problem Solving

Operations Analysis

Judgment and Decision Making

Active Learning

Systems Evaluation

## TOTAL JOBS FOR 2028

2,704



## COMMON KNOWLEDGE COMPETENCIES

Engineering and Technology

Mathematics

Design

Mechanical

## TOP CERTIFICATIONS REQUESTED

Professional Engineer

Licensed Professional Engineer

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education

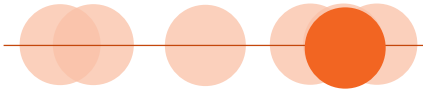


Creative  
Industries

# Industrial Engineers Occupational Profile

## MEDIAN SALARY & WAGES

\$38.60/hour



## COMMON JOB TITLES

Process Engineer  
Quality Assurance Engineer  
Quality Engineer  
Manufacturing Engineer

## REQUESTED EDUCATION

Bachelor's+



## TOP SKILLS REQUESTED

Reading Comprehension  
Active Listening  
Writing  
Critical Thinking  
Complex Problem Solving  
Speaking  
Monitoring  
Judgment and Decision Making  
Mathematics  
Active Learning

## TOTAL JOBS FOR 2028

1,901



## COMMON KNOWLEDGE COMPETENCIES

Engineering and Technology  
Production and Processing  
Mathematics  
Mechanical

## TOP CERTIFICATIONS REQUESTED

American Society for Quality Certified  
Certified Quality Engineer  
Professional Engineer  
Certified Welding Inspector

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education

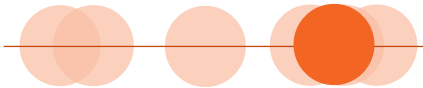


Creative  
Industries

# Civil Engineers Occupational Profile

## MEDIAN SALARY & WAGES

\$38.15/hour



## COMMON JOB TITLES

Civil Engineer  
Project Engineer  
Structural Engineer  
Geotechnical Engineer

## REQUESTED EDUCATION

Bachelor's+

## TOP SKILLS REQUESTED

Reading Comprehension  
Critical Thinking  
Active Listening  
Speaking  
Mathematics  
Complex Problem Solving  
Operations Analysis  
Systems Analysis  
Time Management  
Science

## TOTAL JOBS FOR 2028

2,512



## COMMON KNOWLEDGE COMPETENCIES

Engineering and Technology  
Building and Construction  
Mathematics  
Design

## TOP CERTIFICATIONS REQUESTED

Professional Engineer  
Licensed Professional Engineer  
Registered Communications  
Distribution Engineer

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education



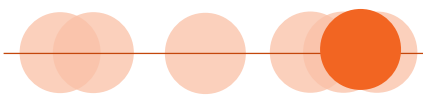
Creative  
Industries



# Architectural and Engineering Managers Occupational Profile

## MEDIAN SALARY & WAGES

\$56.68/hour



## COMMON JOB TITLES

Engineering Manager  
Project Manager  
Director of Engineering  
Program Manager

## REQUESTED EDUCATION

Bachelor's+

## TOP SKILLS REQUESTED

Reading Comprehension  
Critical Thinking  
Active Listening  
Speaking  
Coordination  
Complex Problem Solving  
Judgment and Decision Making  
Time Management  
Writing  
Mathematics

## TOTAL JOBS FOR 2028

2,114



## COMMON KNOWLEDGE COMPETENCIES

Engineering and Technology  
Design  
Mathematics  
Administration and Management

## TOP CERTIFICATIONS REQUESTED

Professional Engineer  
Project Management Professional  
Licensed Professional Engineer  
Master of Business Administration (MBA)

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education



Creative  
Industries



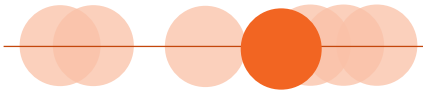
OKLAHOMA  
WORKS

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# Environmental Engineers Occupational Profile

## MEDIAN SALARY & WAGES

\$32.38/hour



## COMMON JOB TITLES

Environmental Engineer  
Project Manager  
Environmental Services Technician  
Water Resource Engineer

## REQUESTED EDUCATION

Bachelor's+

## TOP SKILLS REQUESTED

Reading Comprehension  
Critical Thinking  
Active Listening  
Active Learning  
Complex Problem Solving  
Writing  
Speaking  
Monitoring  
Judgment and Decision Making  
Time Management

## TOTAL JOBS FOR 2028

785



## COMMON KNOWLEDGE COMPETENCIES

Engineering and Technology  
Mathematics  
Chemistry  
English Language

## TOP CERTIFICATIONS REQUESTED

Professional Engineer  
Licensed Professional Engineer  
Certified Hazardous Materials Manager  
Qualified Environmental Professional

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education

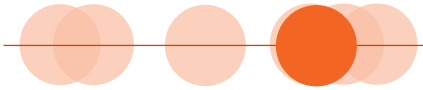


Creative  
Industries

# Electrical Engineers Occupational Profile

## MEDIAN SALARY & WAGES

\$41.40/hour



## COMMON JOB TITLES

Design Engineer  
Senior Electrical Engineer  
Electrical Engineer  
Field Engineer

## REQUESTED EDUCATION

Bachelor's+

## TOP SKILLS REQUESTED

Reading Comprehension  
Active Listening  
Writing  
Critical Thinking  
Complex Problem Solving  
Speaking  
Active Learning  
Monitoring  
Mathematics  
Operations Analysis

## TOTAL JOBS FOR 2028

1,341



## COMMON KNOWLEDGE COMPETENCIES

Engineering and Technology  
Computers and Electronics  
Design  
Mathematics

## TOP CERTIFICATIONS REQUESTED

Professional Engineer  
Licensed Professional Engineer  
Commercial Driver's License (CDL)  
Transportation Worker Identification Credential (TWIC) Card

## SIMILAR INDUSTRIES



Aerospace  
& Defense



Agriculture &  
Biosciences



Energy



Information &  
Financial  
Systems



Transportation  
& Distribution



Construction



Health Care



Education



Creative  
Industries

# Oklahoma's Ecosystems

## WHAT IS AN ECONOMIC ECOSYSTEM?

Oklahoma has identified nine driver and complementary economic systems representing the most prominent industries in terms of wealth generation and growth potential. Driver ecosystems drive wealth generation in Oklahoma, while the complementary ecosystems help to expand wealth in the economy and provide the infrastructure and services to support the driver systems in the state.

- Driver ecosystems: Aerospace and Defense, Agriculture and Biosciences, Energy, Information and Financial Systems, and Transportation and Distribution.
- Complementary Ecosystems: Construction, Health care, Education, and Creative industries.

## WHAT ARE THE 100 CRITICAL OCCUPATIONS?

These occupations represent the most pressing needs in each of Oklahoma's Driver and Complementary Economic Systems necessary for the state's continued growth and economic prosperity. A workforce pipeline for each of the top 100 critical occupations is required for Oklahoma's businesses to grow and for Oklahoma citizens to earn a prosperous living. Factors included in the selection process demonstrate the values of job growth, wealth generation, and education, as outlined below:

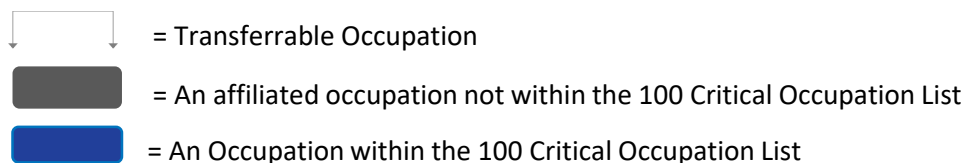
- Job growth: all occupations have positive forecasted employment growth over the next ten years
- Wealth Generation: all occupations offer median wages greater than or equal to \$12.00 per hour
- Education: occupations requiring "no formal education" are eliminated, except those that offer greater than or equal to \$20.00 per hour.

## WHAT ARE TRANSFERABLE OCCUPATIONS?

There are occupations that can provide valuable on-the-job training for individuals interested in the 100 Critical Occupations. These are generally entry-level or mid-career level occupations that can help individuals develop the knowledge, skills, and abilities needed to move forward on their career paths.

## WHAT ARE CAREER PATHWAYS?

Career pathways are designed to help people who are looking to make the next step in their careers both envision and plan for their long-term employment goals. The recommended pathways in this report are based on forecasted employment prospects as well as knowledge, skills and ability profile data by specific occupation. These data were gathered from numerous employer-demand driven data sources. Based on these data, Oklahoma Works determined similarities and difference between each occupation's required skill sets and developed possible career pathways options.



**The lines within this career lattice provide potential pathways that workers can follow within this industry ecosystem. The colors are simply to differentiate one pathway option from the other.**



# Glossary

**ABILITIES** – the proficiency, skills, or talent within a particular area.

**CAREER PATHWAY** – a career pathway means a combination of relevant, rigorous and high-quality education, training, and supportive services that aligns both vertically and horizontally across Secondary Education, Adult Basic Education, Workforce Training and Development, Career and Technical Education, and Postsecondary Education systems, pathways, and programs.

**CERTIFICATION** – third party accrediting or authorizing agency or person who assess, verifies, and provides an official documentation that attests a level of achievement.

**COMPETENCIES** – an individual’s ability to do a job properly through a set of behaviors.

**INDUSTRY-ALIGNED CREDENTIAL** – credentials whose standards are aligned to industry-recognized standards.

**INDUSTRY-ENDORSED CREDENTIAL** – credentials whose standards are aligned to and endorsed by industry.

**INDUSTRY-RECOGNIZED CREDENTIAL** – an industry-recognized credential is one that either is developed and offered by, or endorsed by a nationally-recognized industry association or organization representing a sizeable portion of the industry sector, or a credential that is sought or accepted by companies within the industry sector for purposes of hiring or recruitment which may include credentials from vendors of certain products.<sup>1</sup>

**KNOWLEDGE** – the skills and information acquired through education or experience.

**MEDIAN HOURLY EARNINGS** – hourly earnings for the occupation reported at the 50th percentile.

**REQUESTED EDUCATION** – the highest level of education for workers within the given occupational category. Please note these are not the level of education of new incoming workers but of workers currently employed within these positions.

**SKILLS** – the ability or expertise to do something well.

**TOTAL JOBS** – estimated number of jobs in the given year, taken as average over a period of 12-months. This value includes both full- and part-time jobs.



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<sup>1</sup> For this analysis, TPMA utilized certifications data from a third-party data aggregator, Economic Modeling Specialists, Inc., which daily accesses over 300 million unique job postings records. Though these certifications have not been vetted by Oklahoma Works, they are observed as commonly requested by industry employers.